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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Edward G. Callway

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ATI TECHNOLOGIES, INC.

C/O VEDDER PRICE KAUFMAN & KAMMHOLZ, P.C.

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CHICAGO, IL 60601

EXAMINER

VAN HANDEL, MICHAEL P

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,768

Applicant(s)

CALLWAY ET AL.

Examiner

Michael Van Handel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-20,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-20,24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is responsive to an Amendment filed 5/01/2006. Claims **1, 3-20, 24, 25** are pending. Claims **1, 6, 10-20** are amended. Claims **2, 21-23** are canceled. Claims **24, 25** are new.

Response to Arguments

1. Applicant's arguments with regard to claims **1, 6, 10, 11, 15, and 24**, filed 5/01/2006 have been fully considered, but they are not persuasive.

Regarding claims **1** and **6**, the applicant argues that Hannah does not disclose a switch operative to cause output image frames to pass from the blending circuit to the frame buffer during a wireless display select mode. The examiner respectfully disagrees. Hannah discloses an enhancement block 104 that receives a decompressed image 112 in order to add graphic overlays to the image, re-size the image, or perform any of a variety of other modifications, thereby producing an enhanced image 114 (col. 2, l. 50-56). Since the enhancement block modifies the original decompressed image, the examiner interprets the enhancement block to be a blending circuit. When the display is not connected directly to the enhancement receiver (i.e. the display is remote from the receiver), the video frames are re-encoded prior to transmission (col. 2, l. 30-33). Further, Hannah discloses re-broadcasting MPEG-2 transmissions inside the home to a remote digital display as over-the-air MPEG-2 transmissions without the need for a cable connection (col. 5, l. 46-53). The examiner interprets this to be equivalent to a wireless display select mode, as claimed. When the display is connected to a local display, the

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decompressed video stream is sent to the local display 136 connected to the system. Since the display 136 is local, the reproduced stream 112 is not re-encoded before being sent (col. 2, l. 43-48). Thus, stream 112 is sent to the encoder 106 if a remote display is connected and is not sent to the encoder 106 if a local display is connected. The examiner interprets this to be the functional equivalent of a switch. Still further, Hannah discloses that the encoder 106 may receive an enhanced image 114 and a reproduced image 112. From the two images, the encoder 106 may derive motion vector hints 108 based upon a comparison between the images 112 and 114 (col. 7, l. 29-39). Thus, Hannah must buffer at least two images in the encoder 106. The examiner interprets this buffer to be a frame buffer, as claimed. Thus, the examiner maintains that Hannah meets the limitation of "a switch operative to cause output image frames to pass from the blending circuit to the frame buffer during a wireless display select mode" as currently claimed.

Regarding claims 10 and 11, the applicant argues that Hannah does not disclose encoding retrieved rendered graphics data to produce encoded graphics data and sending the encoded graphics image data to a short range wireless receiver using a short range wireless transmitter. The examiner respectfully disagrees. Hannah discloses adding graphical overlays to a decompressed transport stream to change how the original MPEG-2 content is seen on a remote digital display (col. 5, l. 54-57). Hannah further discloses re-broadcasting cable or satellite MPEG-2 transmissions inside the home to digital televisions without the need for a cable connection by broadcasting over-the-air MPEG-2 transmissions by digital modulation of standard TV carrier radio waves (col. 5, l. 46-53). The examiner notes that a short range wireless transmitter and receiver are inherent to the function of broadcasting MPEG-2 transmissions

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inside the home without the need for a cable connection. Thus, the examiner maintains that Hannah teaches the limitation of “encoding retrieved rendered graphics data to produce encoded graphics data and sending the encoded graphics image data to a short range wireless receiver using a short range wireless transmitter” as currently claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., claim 10 may include a system that compresses graphics image data independent of a video stream) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding claim 15, the applicant argues that Hannah does not disclose providing image data using a multi-processor arrangement, wherein rendering commands are processed using a first processor, and that the rendered graphics image data is retrieved from a frame buffer over a local bus using a second processor, wherein the second processor encodes the retrieved rendered graphics image data to produce encoded graphics image data and sends the encoded graphics image data to a wireless monitor using a short range wireless transmitter. The examiner respectfully disagrees. Hannah discloses an enhancement block 104 that generates and adds graphic overlays to decompressed images, thereby creating enhanced images (col. 2, l. 50-56, 66 & Fig. 1). This meets the limitation of processing rendering commands by a first processor. Once the enhanced image 114 is generated, the enhancement block 104 may send the image 114 to the encoder 106 (col. 2, l. 66-67). The encoder receives the enhanced image 114 and the reproduced image 112, and derives motion vector hints 108 based upon a comparison between

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the images 112 and 114. For example, if the enhanced image includes a graphics overlay image, a subtraction of the reproduced image 112 from the enhanced image 114 will produce the graphics overlay image (col. 7, l. 29-39). This meets the limitation of a frame buffer that stores rendered graphics image data. The variable-length coder 154 retrieves the motion vectors 120 and the partially compressed enhanced image 114. The variable-length coder 154 further compressed the image as bit stream 134. The bit stream 134 is then received by the buffer 156 and sent out of the encoder 106 as the compressed enhanced image 116 (col. 8, l. 5-10 & Fig. 4). This meets the limitation of a second processor that retrieves rendered graphics image data and encodes the retrieved graphics image data to produce encoded graphics image data and sends the encoded graphics image data to a wireless monitor using a short range wireless transmitter. Thus, the examiner maintains that Hannah teaches “processing rendering commands using a first processor to produce rendered graphics image data and storing the rendered graphics image data to a frame buffer, retrieving the rendered graphics image data from the frame buffer over a local bus using a second processor, encoding, by the second processor, the retrieved rendered graphics image data to produce encoded graphics image data, and sending the encoded graphics image data to a wireless monitor using a short range wireless transmitter” as currently claimed.

Regarding claim 24, the applicant argues that the references fail to show certain features of applicant's invention; however, it is noted that the features upon which applicant relies (i.e., a system that sends graphics commands wirelessly as opposed to, for example, rendered graphics data in addition to or instead of recompressed image data if desired) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations

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from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Objections

1. Claim 24 is objected to because of the following informalities:

Referring to claim 24, the examiner regards the phrase “decompressing, by a first apparatus, a decompressed video stream to produce a decompressed video stream” as a mistake on the applicant’s part. The examiner recommends that the phrase be changed to “decompressing, by a first apparatus, a compressed video stream to produce a decompressed video stream.” The examiner interprets the claim in the Office Action below as though the recommended changes have been made.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-5, 10-19, 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Hannah.

Referring to claims 1, 10-13, and 15-18, Hannah discloses a wireless display circuit/method comprising:

- a graphics processing circuit 302 operatively coupled to a frame buffer (the examiner notes that a frame buffer is inherent to the encoder 106, since the encoder derives motion vector hints based upon a comparison between a reproduced image 112 and an enhanced image 114) and operative to render graphics data based on rendering commands and to store rendered graphics data in the frame buffer (col. 2, l. 13-24, 50-56; col. 7, l. 29-39; & Figs. 4, 6);
- a video decoder 102, 330 operatively responsive to a compressed video stream and operative to produce decoded video from the compressed video stream for display on a local display (col. 2, l. 35-48 & Fig. 1);
- a short range wireless transmitter operatively coupled to the graphic processing circuit (col. 3, l. 1-4 & col. 5, l. 46-53);
- a data encoder 106, 330 operatively coupled to the frame buffer and to the short range wireless transmitter (the examiner notes that a wireless transmitter must be connected to the frame buffer in order for a set-top box to re-broadcast MPEG-2 transmissions inside the home to televisions without using a cable connection), operative to encode the rendered graphics data stored in the frame buffer and to recompress the decoded video (col. 3, l. 10-16);
- a blending circuit 104 operative to blend rendered graphics data and the decoded video (col. 2, l. 50-56), prior to the data encoder recompressing the decoded video to

- produce image frames containing recompressed video with encoded graphics data (Fig. 1); and
- a switch operative to cause output image frames to pass from the blending circuit to the frame buffer during a wireless display select mode (the examiner notes that the enhanced image may be sent to the encoder 106 to be encoded for receipt by a remote display, if the user desires)(col. 2, 66-67; col. 3, l. 1-4; & col. 7, l. 29-39);
 - wherein the short range wireless transmitter transmits the encoded rendered graphics data and the recompressed decoded video (this limitation is met above).

Referring to claim 3, Hannah discloses the circuit of claim 1, wherein the data encoder includes a suitably programmed processor 302 operatively coupled to the frame buffer 312 via a local bus (col. 8, l. 47-61).

Referring to claim 4, Hannah discloses the circuit of claim 3, wherein the suitably programmed processor carries out MPEG encoding on the rendered graphics data and on the decoded video to produce compressed image frames containing recompressed video with encoded graphics data that are wirelessly transmitted by the short range wireless transmitter (col. 9, l. 19-23).

Referring to claim 5, Hannah discloses the circuit of claim 1, wherein the data encoder includes a hardware based data encoder resident on at least one of a same printed circuit board and same integrated circuit die as the graphics processing circuit (the examiner notes that the MPEG encoder and the graphics controller are both connected to a local PCI bus and are therefore both resident on the same printed circuit board)(Fig. 6).

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The USPTO considers the applicant's "at least one of" language to be anticipated by any reference containing any of the subsequent corresponding elements.

Referring to claims **14**, and **19**, Hannah discloses the methods of claims 10 and 15, respectively, comprising:

- receiving, via a short range wireless receiver, a compressed video stream containing graphics data and recompressed video (the examiner notes that this is inherent to Hannah, since it is required for reception of the graphics and video);
- decompressing the received compressed video stream and producing decompressed image frames (inherent, since a video decoder is required for decompression of the MPEG stream); and
- displaying the decompressed image frames on a local display (remote display).

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Referring to claim 24, Hannah discloses a method for providing image data for a wireless monitor comprising:

- decompressing, by a first apparatus, a compressed video stream to produce a decompressed video stream (col. 2, l. 35-48 & Fig. 1);
- recompressing the decompressed video stream to produce a recompressed video stream (col. 2, l. 66-67 & col. 3, l. 1-16); and
- sending the recompressed video stream wirelessly (col. 5, l. 46-53); and
- sending rendering commands wirelessly to be processed remotely (Hannah discloses adding graphical overlays to a transport stream or re-scaling or re-segmenting MPEG-2 content at a set-top box and then re-broadcasting the MPEG-2 transmissions inside a home to digital televisions without the need for a cable connection)(col. 5, l. 46-63).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannah in view of Yap et al.

Referring to claim 6, Hannah discloses a wireless display system comprising:

- a first unit having at least:
 - o a first local display 136 (Fig. 1);
 - o a first frame buffer 312 (Fig. 6);
- a graphics processing circuit 320 operatively coupleable to a frame buffer (the examiner notes that a frame buffer is inherent to the encoder 106, since the encoder derives motion vector hints based upon a comparison between a reproduced image 112 and an enhanced image 114) and operative to render graphics data based on rendering commands and to store rendered graphics data in the frame buffer (col. 2, l. 13-24, 50-56; col. 7, l. 29-39; & Figs. 4, 6);
- a first video decoder 102, 330 operatively responsive to a compressed video stream and operative to produce decoded video from the compressed video stream for display on a local display (col. 2, l. 35-48);
- a short range wireless transmitter operatively coupled to the graphic processing circuit (col. 3, l. 1-4)(col. 5, l. 46-53);
- a data encoder 106, 330 operatively coupled to the frame buffer 312 and to the short range wireless transmitter (the examiner notes that a wireless transmitter must be connected to the frame buffer in order for a set-top box to re-broadcast MPEG-2 transmissions inside the home to televisions without using a cable connection), operative to encode the rendered graphics data stored in the frame buffer and to recompress the decoded video (col. 3, l. 10-16);

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- a blending circuit 104 operative to blend rendered graphics data and the decoded video (col. 2, l. 50-56), prior to the data encoder recompressing the decoded video to produce image frames containing recompressed video with encoded graphics data (Fig. 1); and
- a switch operative to cause output image frames to pass from the blending circuit to the frame buffer during a wireless display select mode (the examiner notes that the enhanced image may be sent to the encoder 106 to be encoded for receipt by a remote display, if the user desires)(col. 2, 66-67; col. 3, l. 1-4; & col. 7, l. 29-39);
- wherein the short range wireless transmitter transmits the encoded rendered graphics data and the recompressed decoded video (this limitation is met above).

Hannah also discloses:

- a second unit having a second local display (remote display);
- a short range wireless receiver responsive to the encoded rendered graphics data and recompressed decoded video (the examiner notes that this is inherent to Hannah, since it is required for reception of the graphics and video); and
- a video decoder operatively coupled to the short range wireless receiver and operative to produce decoded video from the received encoded rendered graphics data and recompressed decoded video for display on the second local display (inherent, since a video decoder is required for decompression of the MPEG stream).

Hannah does not disclose that the second unit has a frame buffer. Yap et al. discloses a set top box with three frame buffers for MPEG decoding (p. 7, paragraph 77)(Fig. 3). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify

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Hannah to include frame buffers such as that taught by Yap et al. in order to provide a continuously smooth video viewing experience.

Referring to claims 7-9, the combination of Hannah and Yap et al. teaches the system of claim 6, wherein the video decoder includes a suitably programmed processor 330 that carries out MPEG decoding on the received encoded rendered graphics data and recompressed decoded video to produce decompressed image frames and is operatively coupled to the second frame buffer via a local bus (this limitation is met by the Yap et al. citation of claim 6). The combination of Hannah and Yap et al. also teaches that the video decoder includes a hardware based video decoder resident on at least one of a same printed circuit board and same integrated circuit die as the frame buffer (the examiner notes that the video decoder and frame buffers are both resident on the same local bus and are therefore both resident on the same printed circuit board). The USPTO considers the applicant's "at least one of" language to be anticipated by any reference containing any of the subsequent corresponding elements.

5. Claims 20, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannah in view of Kapell et al.

Referring to claim 20, Hannah discloses the method of claim 15. Hannah also discloses a short range wireless receiver (see note in claim 6 above). Hannah does not disclose the step of wirelessly sending drawing commands to a short range wireless receiver. Kapell et al. discloses a cursor control that allows a viewer to draw shapes and designs over the received television image (col. 4, l. 15-21). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify Hannah to include a cursor control that allows a viewer to

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draw shapes and designs over a received television image such as that taught by Kapell et al. in order to allow viewers to interact with TV programs without causing physical damage to television viewing hardware (col. 1, l. 36-40).

Referring to claim 25, Hannah discloses the method of claim 24, comprising decompressing the recompressed video stream (col. 5, l. 46-63). Hannah does not disclose processing, by a second apparatus, wirelessly received graphics rendering commands to produce rendered graphics data and combining the rendered graphics image data with the decompressed video stream to produce frames of image data. Kappell et al. discloses allowing a user to send commands wirelessly from a remote control handset to a set-top box (STB) via an infra-red (IR) signal. The commands instruct the STB to display one or more graphics entities or entertainment images over a received television image on a video display device (col. 3, l. 36-67 & col. 4, l. 1-27). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify Hannah to include wirelessly communicating commands to a STB for displaying graphics entities or entertainment images over a received television image on a video display device, such as that taught by Kappell et al. in order to allow viewers to interact with TV programs without causing physical damage to television viewing hardware (col. 1, l. 36-40).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Slobodin et al. discloses a method and apparatus for wireless image transmission to a projector.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Van Handel whose telephone number is 571.272.5968. The examiner can normally be reached on Monday-Friday, 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571.272.7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Van Handel
Examiner
Art Unit 2623

MVH


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